MAKING MODERN LIVING POSSIBLE

Installation Guide

ECtemp 550

Electronic Intelligent Thermostat

www.EH.danfoss.com

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The English language is used for the original instructions. Other languages are a translation of the original instructions. (Directive 2006/42/EC)

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1 Introduction

The ECtemp 550 thermostat controls electrical floor heating elements using a built-in and/or an external temperature sensor. The thermostat can be optimised for the room within a few days after the installation by continuously collecting updated temperature data. This will enable the unit to compensate for sudden temperature changes and makes it possible to achieve the selected temperature at the right time.
Furthermore, the unit is able to automatically lower or raise the temperature at specific points of time, i.e. automatically switch between comfort and economy temperature.

Note: This thermostat does not apply to tariff control or similar systems.

More information on this product can also be found at: ectemp.danfoss.com

1.1 Technical Specifications

Operation voltage	220-240 V~, 50/60 Hz
Standby power consumption	<500mW
Relay: Resistive load Inductive load	 Max. 16A / 3680W @ 230V cos φ= 0.3 Max. 1A
Sensing units	NTC 15 kOhm at 25°C
Sensing values: 0°C 25°C 50°C	 42kOhm 15kOhm 6kOhm
Hysteresis	± 0.2°C with room sensor ± 0.4°C with floor sensor only
Ambient temperature	0 to +30°C
Floor temperature limit	+20 to +50°C
Frost protection temp.	5°C - ❄

Temperature range	+5 to +35°C (room) or +5 to +50 (floor)
Lowering in economy periods	0 to -30°C
Offset (temp. correction)	-5,5 to +5,5°C
Cable specification max.	1x4mm^2 or 2x2,5mm^2
Ball pressure temperature	75°C
Pollution degree	Degree 2 (domestic use)
Type	Type 1C
Software class	Class A
Storage temperature	-20°C to +65°C
Battery back-up	100 hours
IP class	30
Protection class	Class II - ⧈
Weight	110g
Dimensions	85 x 85 x 55mm (in-wall depth: 24mm)

The product complies with the EN/IEC Standard "Automatic electrical controls for household and similar use":

- EN/IEC 60730-1 (general)
- EN/IEC 60730-2-7 (timer)
- EN/IEC 60730-2-9 (thermostat)

1.2 Safety Instructions

Make sure the mains supply to the thermostat is turned off before installation. If the thermostat is installed in a network, the mains supply to all thermostats in the network must be off.

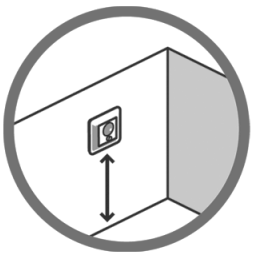
IMPORTANT: When the thermostat is used to control a floor heating element in connection with a wooden floor or similar material, always use a floor sensor and never set the maximum floor temperature to more than 35°C.

Please also note the following:

- The installation of the thermostat must be done by an authorized and qualified installer according to local regulations.
- The thermostat must be connected to a power supply via an all-pole disconnection switch.
- The sensor is to be considered as live voltage. Have this in mind if the sensor must be extended.
- Always connect the thermostat to continuous power supply.
- Do not expose the thermostat to moisture, water, dust, and excessive heat.

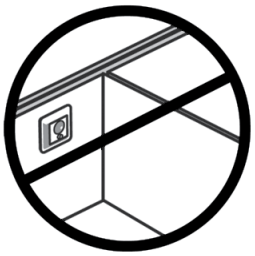
2 Mounting Instructions

Please observe the following placement guidelines:



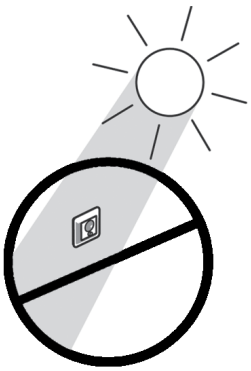
Place the thermostat at a suitable height on the wall (typically 80-170cm.).

The thermostat should not be placed in wet rooms. Place it in an adjacent room. Always place the thermostat according to local regulation on IP classes.

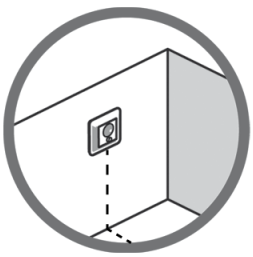


Do not place the thermostat on the inner side of an exterior wall.

Always install the thermostat at least 50 cm. from windows and doors.



Do not place the thermostat in a way that it will be exposed to direct sunlight.

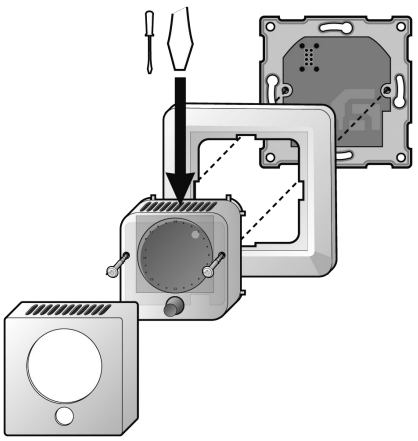


Note: A floor sensor enables a more accurate temperature control and is recommended in all floor heating applications and **mandatory** under wooden floors to reduce the risk of over-heating the floor.

- Place the floor sensor in a conduit in an appropriate place where it is not exposed to sunlight or draft from door openings.
- Equally distant and >2cm from two heating cables.
- The conduit should be flush with the floor surface - countersink the conduit if necessary.
- Route the conduit to the connection box.
- The bending radius of the conduit must be min 50mm.

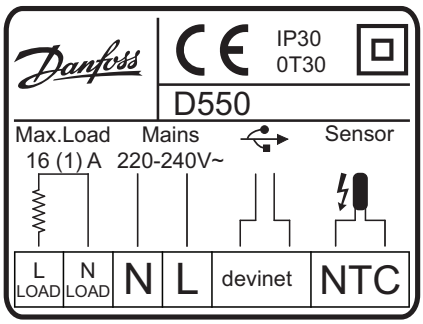
Follow the steps below to mount the thermostat:

1. Open the thermostat:



- Push down the release tab.
- Carefully detach the front cover.
- Remove the two screws.
- Carefully detach the display module. Make sure to pull it straight out to avoid damaging the 8-pin connector plug on the back of the module.
- Carefully detach the frame.

2. Connect the thermostat according to the connection diagram.

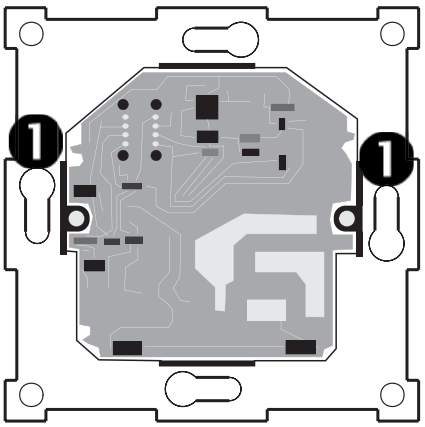


The screen of the heating cable must be connected to the earth conductor of the power supply cable by using a separate connector.

The devinet terminals are used when connecting thermostats in a network. Network cables must be of identical isolation value as normal installation cables and have a recommendable specification of 2x1,5mm2 and a total length of maximum 100m.

Note: Always install the floor sensor in a conduit in the floor.

3. Mount and reassemble the thermostat.



1 = Screw holes for mount and reassemble the thermostat.

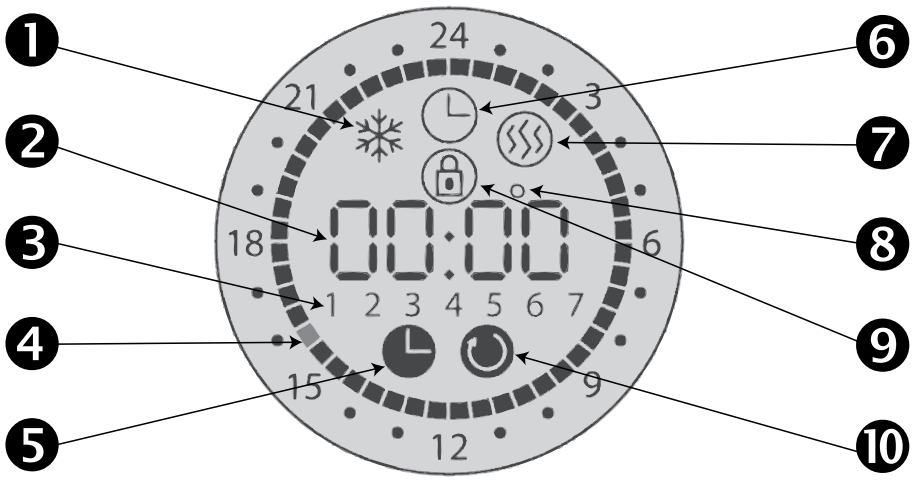
- Fasten the thermostat to a socket or an exterior wall box by driving the screws through the holes in each side of the thermostat.
- Install the frame, display module, and front cover in the reverse order of disassembly.
  Make sure to carefully put the display module in place and do not over-tighten the screws.

4. Turn on the power supply.

Initially main supply the thermostat for 15 hours to fully charge the battery. The current time and day is then kept for 100 hours if mains supply is off. All other settings are stored permanently.

3 Settings

The thermostat is automatically activated when the power supply is turned on.
Note: If the unit has never been activated before, basic configuration settings must be specified.



1. Symbol for frost protection.
2. Numeric display of time, temperature, text, etc.
3. Day of week.
4. Flashing indication of actual time.
5. Symbol for setting of time and day.
6. Symbol for timer mode.
7. Symbol indicating that the floor is being heated.
8. Symbol for degrees.
9. Safety lock.
10. Symbol for economy periods with lower temperature.

3.1 Time and Day of Week Settings

1. Press and hold the button for 3 seconds.
   The clock symbol appears on the display and the day of the week is shown as a number (from 1-7) just below the time. You change the day of week by turning the button in either direction and the time passes 00:00.

2. Find and set the correct day and time. A black dot will appear on the outer ring at the same time.

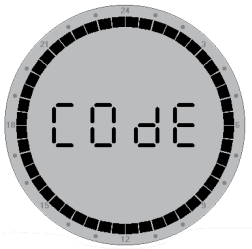
3. Press the button once to confirm.

3.2 Basic Settings

The following table shows the default values of the basic settings:

Item	Default setting	Options
Network type	Alone (ALO)	Independent (ALO) Master (MAS) Slave (SLA)
Adaptive function	On (AdAP)	On (AdAP) Off (OFF)
Sensor	Room + floor sensor (rFS)	Floor sensor (FS) Room sensor (r S) Room + floor sensor (rFS)
Max. floor temperature	+35 °C	+20 to +50 °C
Offset	0.0 °C	-5.5 to +5.5 °C
Lowering in economy periods	-5 °C	-1 to -30 °C
Day of week	1	1 to 7
Time	00.00	24 hour clock
Timer	Set	Up to 336 settings/week

How to enter the basic configuration settings



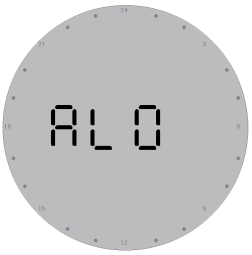
1. Press and hold the button for 12 seconds until “COdE” appears.
2. Turn the button clockwise until “0044” appears.
3. Press the button once to confirm.

Network: How to specify whether you want to connect this thermostat with other thermostats in a network

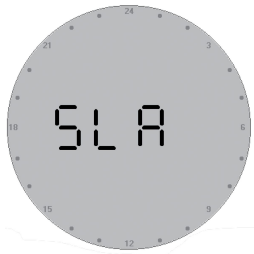
Please note that the slave units must be connected to the master unit using the devinet terminals.

1. Define the thermostat as independent, master or slave unit.

   To define this unit as an independent unit or if network is not used, choose **ALO**.



   To define this unit as the master unit in the network, choose **MAS**.



To define this unit as a slave unit in the network, choose **SLA**.

Only one unit in the network can be defined as master unit. All slave units will respond to and send information to the master unit. Time, day of week and economy periods will be controlled from the master unit. All other settings must be specified for each slave unit. No more than 32 units can be combined in a network including independent units (even though these units do not communicate with the master unit).

2. Press the button once to confirm your selection.

<u>Adaptive regulation</u>: How to specify whether or not to optimise this thermostat for the room by timing heating start/stop

1. Turn the adaptive function on or off.

   To let the unit continuously collect updated room data, choose **AdAP**.
   This means improved performance (with compensation for e.g. sudden temperature drops in the room) and precise timing so the selected temperature is achieved at the desired time.

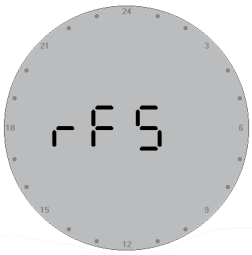
   To turn off the adaptive function, choose **OFF**
   This means that the heating will not start/stop until the specified time.

2. Press the button once to confirm your selection.

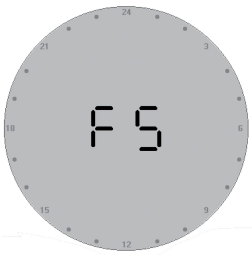
Sensor: How to specify whether an external floor sensor, the built-in room sensor or both is used to control the floor heating

1. Turn the button to choose one of the following sensor settings:

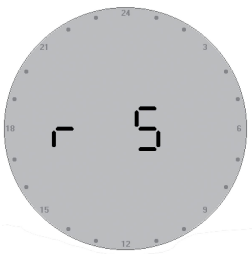
   If both a room sensor and a floor sensor is used, choose **rFS**.
   This option is suitable for all rooms but wet rooms. The thermostat must be installed in the same room as the floor sensor and the heating elements.



   If only a floor sensor is used, choose **FS**.
   The built-in room sensor is not used. This option is suitable for rooms in which a constant floor temperature is required, e.g. in a bathroom.



   If only a room sensor is used, choose **r S**.
   This option is **not recommendable** due to an increased risk of overheating the floor. The thermostat must be installed in the same room as the heating elements.

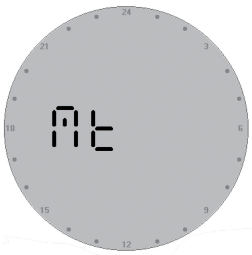


2. Press the button once to confirm your selection.

How to set the maximum floor temperature

Special condition: This setting only applies if a floor sensor is used (the **FS** or **rFS** sensor option has been set).

1. Turn the button to change the temperature.
2. Press the button once to confirm your selection.



Note: Please contact the floor supplier before changing the maximum floor temperature and be aware of the following:

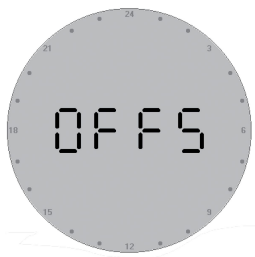
- The floor temperature is measured where the sensor is placed.
- The temperature of the bottom of a wooden floor can be up to 10 degrees higher than the top.
- Floor manufactures often specify the max. temperature on the top surface of the floor.

Thermal resistance [m2K/W]	Examples of flooring	Details	Approximate setting for 25˚C floor temperature
0.05	8 mm HDF based laminate	> 800 kg/m^3	28˚C
0.10	14 mm beech parquet	650 - 800 kg/m^3	31˚C
0.13	22 mm solid oak plank	> 800 kg/m^3	32˚C
< 0.17	Max. carpet thickness suitable for floor heating	acc. to EN 1307	34˚C
0.18	22 mm solid fir planks	450 - 650 kg/m^3	35°C

Offset: How to select an offset value for calibrating the thermostat's temperature display so the thermostat shows the same temperature as another thermometer in the room

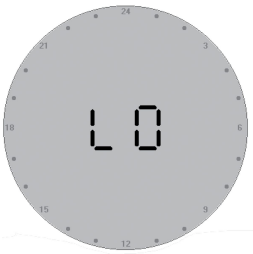
Special condition: This option only applies if an installation with a room sensor is used.

1. Turn the button to specify an offset value between -5,5°C and +5,5°C.
2. Press the button once to confirm your selection.



<u>Temperature decrease</u>: How to specify how much the temperature is to be lowered during economy periods

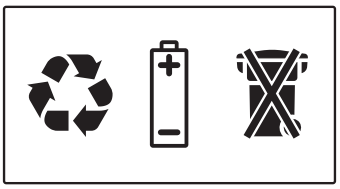
<u>Note</u>: If normal room heating is installed, we recommend lowering the temperature by no more than approx 5 °C. By default, the temperature decrease is set to -5 °C



1. Turn the button to set the setback level. For example, choose -4 °C to lower the temperature by 4 degrees.
2. Press the button once to confirm your selection. The display returns to normal.

4 Warranty

5 Disposal Instruction



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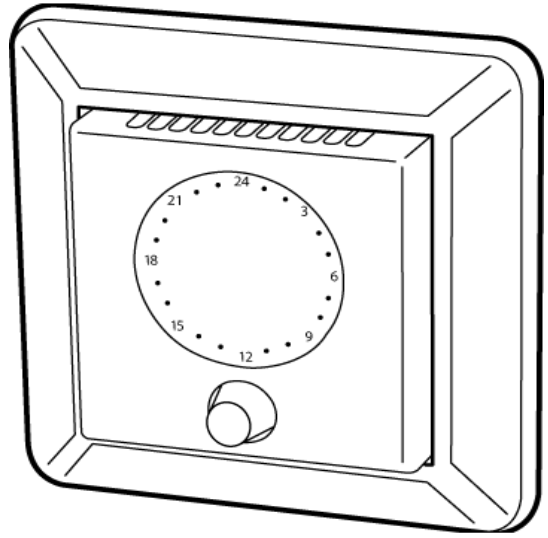
ECtemp 550 ELKO

088L0044

Intelligent Timer
Thermostat
Floor / Room Sensor
220-240V~
50-60Hz~
+5 to +35°C
16A/3680@230V~
IP 30



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